ORIGINAL

Court S. Rich AZ Bar No. 021290
Rose Law Group pc
7144 E. Stetson Drive, Suite 300
Scottsdale, Arizona 85251
Email: CRich@RoseLawGroup.com
Direct: (480) 505-3937
Attorney for Energy Freedom Coalition of America

BEFORE THE ARIZONA CORPORATION COMMISSION

TOM FORESE CHAIRMAN	BOB BURNS COMMISSIONER	DOUG LITTLE COMMISSIONER
ANDY TOBIN COMMISSIONER	BOYD DUNN COMMISSIONER	

IN THE MATTER OF THE APPLICATION OF ARIZONA PUBLIC SERVICE COMPANY FOR A HEARING TO DETERMINE THE FAIR VALUE OF THE UTILITY PROPERTY OF THE COMPANY FOR RATEMAKING PURPOSES, TO FIX A JUST AND REASONABLE RATE OF RETURN THEREON, TO APPROVE RATE SCHEDULES DESIGNED TO DEVELOP SUCH RETURN.	**DOCKET NO. E-01345A-16-0036** **DOCKET NO. E-01345A-16-0123**
IN THE MATTER OF FUEL AND PURCHASED POWER PROCUREMENT AUDITS FOR ARIZONA PUBLIC SERVICE COMPANY.	**ENERGY FREEDOM COALITION OF AMERICA'S NOTICE OF FILING DIRECT TESTIMONY OF MARK E. GARRETT (COMMERCIAL AND INDUSTRIAL CUSTOMER RATE DESIGN)**

Energy Freedom Coalition of America ("EFCA") hereby provides notice of filing the Direct Testimony of Mark E. Garrett in the above referenced matter.

Respectfully submitted this 3rd day of April, 2017.

Court S. Rich
Attorney for Energy Freedom Coalition of America

Original and 13 copies filed on this 3rd day of April, 2017 with:

Docket Control
Arizona Corporation Commission
1200 W. Washington Street
Phoenix, Arizona 85007

I hereby certify that I have this day served a copy of the foregoing document on all parties of record in this proceeding by regular or electronic mail to:

Timothy La Sota
Arizona Corporation Commission
legaldiv@azcc.gov
chanis@azcc.gov
wvancleve@azcc.gov
tford@azcc.gov
evanepps@azcc.gov
cfitzsimmons@azcc.gov
kchristine@azcc.gov
mscott@azcc.gov
eabinah@azcc.gov

Anthony Wanger
Alan Kierman
IO DATA CENTERS, LLC
t@io.com
akierman@io.com

Meghan Grabel
OSBORN MALEDON, PA
mgrabel@omlaw.com
gyaquinto@arizonaic.org

Patrick Black
FENNEMORE CRAIG, P.C.
pblack@fclaw.com
khiggins@energystrat.com

Warren Woodward
w6345789@yahoo.com

Timothy Hogan
ACLPI
thogan@aclpi.org
ken.wilson@westernresources.org
schlegelj@aol.com
ezuckerman@swenergy.org
bbaatz@aceee.org
briana@votesolar.org
cosuala@earthjustice.org
dbender@earthjustice.org
cfitzgerrell@earthjustice.org

Daniel Pozefsky
RUCO
dpozefsky@azruco.gov

Patricia Ferre
pferreact@mac.com

Thomas Loquvam
Pinnacle West Capital Corp.
Thomas.loquvam@pinnaclewest.com

Greg Eisert
Steven Puck
Sun City Homeowners Association
gregeisert@gmail.com
steven.puck@cox.net

Richard Gayer
rgayer@cox.net

Craig Marks
AURA
craig.marks@azbar.org
pat.quinn47474@gmail.com

Al Gervenack
Rob Robbins
Property Owners & Residents Assoc.
al.gervenack@porascw.org
rob.robbins@porascw.org

Cynthia Zwick
Kevin Hengehold
ACCA
czwick@azcaa.org
khengehold@azcaa.org

Jay Moyes
Moyes Sellers & Hendricks LTD
jasonmoyes@law-msh.com
jimoyes@law-msh.com
jim@harcuvar.com

Kurt Boehm
Jody Kyler Cohn
Boehm Kurtz & Lowry
kboehm@bkllawfirm.com
jkylercohn@bkllawfirm.com

John William Moore, Jr.
Kroger
jmoore@mbmblaw.com

Lawrence V. Robertson, Jr.
Noble Americas Energy Solutions LLC
tubaclawyer@aol.com

Michael Patten
Jason Gellman
Snell & Wilmer LLP
mpatten@swlaw.com
jgellman@swlaw.com
docket@swlaw.com
bcarroll@tep.com
Charles Wesselhoft
Pima County Attorney's Office
charles.wesselhoft@pcao.pima.gov

Tom Harris
AriSEIA
tom.harris@ariseia.org

Giancarlo Estrada
Kamper Estrada LLP
gestrada@lawphx.com

Greg Patterson
Munger Chadwick
greg@azcpa.org

Nicholas Enoch
Kaitlyn Redfield-Ortiz
Emily Tornabene
Lubin & Enoch PC
nick@lubinandenoch.com

Scott Wakefield
Hienton Curry, PLLC
swakefield@hclawgroup.com
mlougee@hclawgroup.com
stephen.chriss@wal-mart.com
greg.tillman@wal-mart.com
chris.hendrix@wal-mart.com

Albert H. Acken
Samuel L. Lofland
Ryley Carlock & Applewhite
ssweeney@rcalaw.com
aacken@rcalaw.com
slofland@rcalaw.com

Jeffrey J. Woner
K.R. Saline & Associates
jjw@krsaline.com

Denis Fitzgibbons
Fitzgibbons Law Offices, PLC
denis@fitzgibbonslaw.com

Thomas A. Jernigan
Andrew Unsicker
Federal Executive Agencies
thomas.jernigan.3@us.af.mil
ebony.payton.ctr@us.af.mil
andrew.unsicker@us.af.mil

John B. Coffman
john@johncoffman.net

Ann-Marie Anderson
Wright Welker & Pauole, PLC
aanderson@wwpfirm.com
aallen@wwpfirm.com

Steve Jennings
AARP Arizona
sjennings@aarp.org

Garry D. Hays
ASDA
ghays@lawgdh.com

Robert L. Pickels, Jr.
Sedona City Attorney's Office
rpickels@sedonaaz.gov

Jason Pistiner
Singer Pistiner PC
jp@singerpistiner.com
kfox@kfwlaw.com
kcrandall@eq-research.com

Thomas E. Stewart
Granite Creek Power & Gas LLC
Granite Creek Farms LLC
tom@gcfaz.com

Timothy J. Sabo
Snell & Wilmer, LLP
tsabo@swlaw.com
jhoward@swlaw.com
pwalker@conservamerica.org

By: 

DIRECT TESTIMONY

OF

MARK E. GARRETT

COMMERCIAL AND INDUSTRIAL CUSTOMER RATE DESIGN TESTIMONY

ON BEHALF OF

ENERGY FREEDOM COALITION OF AMERICA ("EFCA")

APRIL 3, 2017

TABLE OF CONTENTS

I. WITNESS IDENTIFICATION AND PURPOSE OF TESTIMONY

Q: PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A: My name is Mark E. Garrett. My business address is 50 Penn Place, 1900 N.W. Expressway, Suite 410, Oklahoma City, Oklahoma 73118.

Q: DID YOU PROVIDE TESTIMONY ON DECEMBER 21, 2016 IN THE REVENUE REQUIREMENT PHASE OF THESE PROCEEDINGS?

A: Yes. A description of my qualifications and a list of the proceedings in which I have been involved were attached to that testimony.

Q: ON WHOSE BEHALF ARE YOU APPEARING IN THESE PROCEEDINGS?

A: I am appearing on behalf of Energy Freedom Coalition of America ("EFCA").

Q: WHAT IS EFCA's INTEREST IN THIS PROCEEDING?

A: EFCA's primary interest in this proceeding is to help ensure that the rates that result from this case are *just and reasonable* rates – fair to both the Company and its customers. EFCA is also interested in helping maintain and encourage consumer choice and fair rate setting practices, particularly as it applies to the Company's solar customers and those customers who hope to power their homes and businesses with solar and storage technologies in the future.

Q: WHAT IS THE PURPOSE OF THIS TESTIMONY?

A: Pursuant to Section 20.5 of the Settlement Agreement reached in this case, the parties agreed that alternative rate design for large commercial and industrial customers would remain unsettled and that they would ask the Commission to decide on this issue independent of the Settlement Agreement. As a result, this

testimony is being offered to resolve an issue that the parties specifically agreed was not resolved in the Settlement Agreement. The purpose of this testimony is to address alternative rate designs for Schedule E-32 L and E-32 L TOU Large General Service ("LGS") customer classes.

II. DEMAND RATCHET RATES

Q: WHAT ARE YOU RECOMMENDING WITH RESPECT TO THE COMPANY'S DEMAND RATCHETS IN THE LARGE GENERAL SERVICE CLASS?

A: I am recommending that the Commission create an alternative to APS's existing demand ratchet rates for LGS customers in order to promote the adoption of energy storage technologies. Not only do demand ratchets discourage the efficient use of the system and have nearly the same effect on customers as increased fixed charges, but, more importantly, demand ratchets effectively eliminate storage as a viable option for large customers. I propose that APS be directed to provide an optional non-ratchet LGS tariff that allows customers in the rate class seeking to install storage the opportunity to do so.

(a) Ratchets Discourage Efficiency and Act as an Increased Fixed Charge

Q: WHAT IS A DEMAND RATCHET?

A: A demand ratchet is a billing mechanism by which a customer is billed based on their demand during previous billing months and not necessarily the current month. In the case of APS, a ratchet is used to determine the appropriate demand billing determinate to use when assessing a customer's monthly demand charge.

Q: HOW IS APS'S EXISTING DEMAND RATCHET DESIGNED?

A: Currently, APS has an existing demand ratchet for LGS customers. APS assesses a Customer's monthly billing demand as the greatest of the following:[1]

1. The average kW supplied during the 15- minute period (or other period as specified by an individual customer contract) of maximum use during the month, as determined from readings of the Company's meter or in accordance with the Company's Service Schedule 8.
2. 80% of the highest kW measured during the six (6) summer billing months (May-October) of the twelve (12) months ending with the current month
3. The minimum kW specified in the agreement for service or individual contract.

Option two (2) above represents the demand ratchet.

Q: IS APS PROPOSING MODIFICATIONS TO THE STRUCTURE OF THIS RATCHET?

A: No. However, APS is proposing to maintain the current demand ratchet in its currently proposed LGS rate.

Q: WHAT IS THE PURPOSE OF A DEMAND CHARGE?

A: The general argument set forth regarding demand rates is that a properly designed demand charge provides an accurate price signal that reflects the system costs necessary to serve a given customer's individual peak load, while ensuring utility recovery of these necessary fixed system costs. This definition is consistent with what Charles Miessner has expressed less directly in testimony in this APS filing. Typically, demand charges for commercial customers are intended to promote more efficient use of the utility's system capacity by sending a price signal to customers that incentivizes reductions in demand or shifting load from high-use, peak periods

[1] See APS's LGS rates, E-32L and E-32L TOU.

into off-peak periods.

Q: DOES APS'S EXISTING RATCHET RATE STRUCTURE FOR DETERMINING THE BILLING DEMAND FOR LARGE GENERAL SERVICE CUSTOMERS PROVIDE AN APPROPRIATE PRICE SIGNAL THAT INCENTIVIZES EFFICIENCY?

A: No. APS's existing, and proposed, rate design does not send the appropriate signal to incentivize energy efficiency, and, therefore directly contradicts the objective of a demand charge identified by the Company in its application. To incentivize efficiency, customers should be encouraged to use the system more efficiently. APS's demand ratchet structure provides no incentive for customers to reduce their demand for two primary reasons. First, assessing a customer's monthly demand as a portion of the previous 6 months of May through October does not take into account the timing of a customer's demand, and its coincidence with when APS's system peaks. Second, even though the ratchet is considered a variable charge, it acts essentially as a fixed charge because the customer must wait approximately 1 year to receive any economic benefit of reducing demand in a timely manner.

Q: WHY IS THE FAILURE TO ACCOUNT FOR THE TIMING OF DEMAND SIGNIFICANT?

A: Since the demand ratchet is based on a customer's maximum demand on essentially any day or hour of the months May through October, there is little incentive for a customer to reduce demand when it matters most to APS: during peak hours. For example, if a LGS customer sets a maximum demand of 600 kW on a mild May afternoon, there is little incentive to reduce demand below 80% of 600 kW, or 480 kW, for the rest of the year, including during the hottest summer months when APS's system is most constrained.

Q: IS THERE A MORE APPROPRIATE WAY TO DETERMINE THE BILLING DETERMINANT FOR A CUSTOMER'S MONTHLY DEMAND?

A: Yes. Consistent with Commission direction in the TEP rate case for a non-ratcheted rate option that sends a customer price signals based on seasonality and system peak, an LGS customer's maximum demand should be based on a customer's 15-minute maximum demand during the specific billing month, coincident with system peak.[2] When applied to the example above, this rate design would encourage the customer to reduce demand during the 6-month summer season as much as possible to receive the economic benefit, *especially* during APS's high peaking and most costly days and months.

Q: HOW DOES APS'S DEMAND RATCHET, AS IMPLEMENTED, ACT AS A FIXED CHARGE?

A: Similar to a fixed charge, changes in a customer's consumption behavior have little to no impact on their bill once a ratchet is established. A customer is not rewarded for any significant demand usage reduction amounting to up to 20%, for at least a year. Under APS's LGS ratchet, a customer is not economically incentivized to reduce demand to lower than 80% of the previous 12 month's usage that occurred in the previous months of May through October and, therefore, likely will not. As I discuss in the following section, this fixed nature of the demand billing determinant also discourages investment in demand management technologies such as energy storage.

//

[2] Decision No. 75975, paragraph 60, p. 188.

(b) Ratchets Effectively Eliminate Storage as a Viable Option for Large Customers

Q: WHICH TYPES OF CUSTOMERS ARE MOST NEGATIVELY IMPACTED BY DEMAND RATCHETS?

A: While demand ratchets negatively impact any customer that achieves reductions in demand or has variable month-to-month peaks, ratchets disproportionately increase bills for customers that have invested in demand resources, especially energy storage technologies. Existing long standing ratchets, such as APS's ratchet, act to dis-incentivize adoption of such technologies.

Q: HOW DOES A DEMAND RATCHET IMPACT CUSTOMER INVESTMENT IN STORAGE TECHNOLOGIES?

A: A demand ratchet significantly reduces the economic incentives associated with storage technologies. While the impact of a ratchet will vary from customer to customer based on overall consumption and load profile, a ratchet negatively impacts customers with varying monthly or seasonal usage most. For example, commercial customers with storage who reduce demand peaks to less than 80% of the customer's May-October summer peak will not realize savings for the following 12 months due to the ratchet. The risk of having a year's worth of potential savings eliminated by one adverse 15 minute interval is too high for potential storage customers and financiers to reasonably bear. Even if customers could achieve perfect permanent demand reduction, the lag of one year to realize benefits is significant for a technology that generally has a 10-year life. This issue directly and negatively impacts the return on investment in storage technologies.

In the instance of a solar plus storage commercial customer, APS's methodology for determining large billing demand using an annual ratchet rather than monthly maximum on-peak demand does not appropriately capture the summer reductions in demand. Instead, under the existing and proposed ratchets, these

customers would be billed based on their high single month demand, even if they reduced demand during the summer months when APS's system is most stressed.

Similarly, once the ratchet is set, there is little to no motivation for a customer to reduce its demand in lower demand months. As a result, storage technologies provide no demand charge reduction benefit to the customer in these lower demand months with a ratchet in place. Ideally, the demand charge for large customers with storage would send a signal to reduce demand in all months, even those months where the customer's monthly peak demand does not approach the customer's annual peak demand, thereby promoting the use of storage more evenly.

Q: DO YOU HAVE ADDITIONAL SUPPORT FOR THE PROPOSITION THAT RATCHETS EFFECTIVELY ELIMINATE STORAGE AS A VIABLE OPTION FOR LARGE CUSTOMERS?

A: Yes. In the recent TEP rate case, RUCO witness Lon Huber testified that year-round demand ratchets like those proposed by TEP were a deterrent to the adoption of battery storage technology.[3] Specifically, Mr. Huber testified that, "in terms of like a 24-hour demand charge with a full like ratchet, I mean that would kill storage right out of the gate."[4] "Killing storage" is obviously not an acceptable outcome for the Commission or ratepayers.

Q: ARE THERE ADDITIONAL CONCERNS REGARDING THE IMPACT OF A RATCHET ON STORAGE?

A: Yes. As I previously mentioned, in addition to impacts on economics, customers that do choose to adopt storage will not be incentivized to use their storage system on a regular basis other than to reduce their demand to approximately 80% of the highest load of the year. Storage has the considerable added benefit of reducing

[3] Transcript of Testimony from Phase I Hearing in Docket No. E-01933A-15-0322, Huber Vol. VII at 1575:12-20.
[4] Id.

demand and strain on the grid, so a rate design that promotes not only adoption, but consistent use of customer storage reduces overall system costs, thereby providing benefit to all APS ratepayers.

Q: WHAT IS THE LIKELY IMPACT OF THE RATCHET ON THE ADOPTION OF STORAGE?

A: Customers are less likely to invest in storage if they cannot realize the economic benefits. APS's existing ratchet is not conducive to the adoption of storage, and adoption will be further thwarted with the continuation of a ratchet in the LGS rate.

Q: IS APS'S DEMAND RATCHET CONSISTENT WITH COST-BASED RATEMAKING?

A: No. APS's ratchet discourages customers from investing in technologies that help to reduce demand on the system during peak hours. Cost-based ratemaking should send price signals to customers reflective of the costs incurred by APS during the time that demand occurs. Charging customers that reduce demand during these peak hours based, at a minimum, on their highest demand in other, less costly months, is outdated, punitive, and clearly not cost-based. This rate design directly contradicts any Commission objective to design innovative, cost-based rates that incentivize reductions in system peak demand.

Q: WHAT ARE THE BENEFITS THAT STORAGE PROVIDES TO THE DISTRIBUTION SYSTEM?

A: Storage provides several benefits to the distribution system that have the effect of reducing costs for all ratepayers. In addition to providing customers the ability to manage their energy usage and costs, storage, when paired with solar and smart inverters, provides the following benefits:

Avoided energy line losses;
Avoided generation capacity;
Avoided transmission capacity;
Avoided distribution capacity;
Ancillary services;
Reactive power and voltage support;
Increased conservation voltage reduction;
Extended life of distribution equipment;
Increased resiliency and reliability; and
Reduced market clearing price of electricity[5]

Q: IS APS'S PROPOSAL TO CONTINUE ITS EXISTING DEMAND RATCHET FOR LGS CUSTOMERS CONSISTENT WITH THE COMMISSION'S EFFORTS TO INCREASE ADOPTION OF ENERGY STORAGE AND ENERGY EFFICIENCY?

A: No. APS's proposed rate design does not provide economic incentives for the development of cost-effective energy technologies, such as storage, and encourage the implementation of cost-effective energy efficiency. The existing and proposed ratchet rate design directly contradicts these objectives.

Q: HAS THIS COMMISSION PREVIOUSLY PROPOSED ALTERNATIVES TO DEMAND RATCHETS?

A: Yes. As I briefly discussed above, in the recently litigated Tucson Electric Power ("TEP") rate case, Docket No. E-01933A-15-0239, in response to intervenor concerns regarding the incompatibility of demand ratchets and storage, the Commission directed the utility to create a non-ratcheted time-differentiated *optional* rate for LGS customers seeking to adopt energy storage. Specifically, the Commission ordered the following:

> 60. The Company's proposed rate design for the LGS Class is reasonable, however the demand ratchet mechanism featured in this rate design may be incompatible with battery storage technology.

[5] http:/ /www.solarcity.com/sites/default/files/SolarCity_Distributed_Grid-021016.pdf

> Therefore, an optional rate that does not include the demand ratchet mechanism should be made available for those LGS customers electing to adopt storage technology. LGS customers who participate in this optional rate will be placed on advanced, time-differentiated rate plans. This advanced rate would include proper price signals based on the principles of: 1) an On Peak/Off Peak rate with sufficient rate spread between the two time periods, 2) a manageable On Peak window to allow for adequate "peak shaving," and 3) proper price signals based on seasonality. As such, TEP will use rate plans and tariffs deemed appropriate by the Company for participants in this rate design.[6]

In addition to approving this new non-ratcheted rate option in this proceeding, the Commission rejected the use of demand ratchets for the Medium General Service class, directing TEP, in its next rate case, to "consider and provide testimony on the use of seasonal and time of use demand charges as an alternative to ratchets."[7]

Q: DO YOU AGREE WITH THESE DECISIONS?

A: Yes. With respect to the LGS class, the Commission's decision was an efficient way to let storage technology develop in Arizona without disrupting the existing LGS rate structure for the remaining customers in the class. It is also notable that the Commission rejected imposing demand ratchets on the MGS class in that case.

Q: IS THERE OTHER RECENT COMMISSION PRECEDENT IN ARIZONA TO REMOVE OR REDESIGN DEMAND RATCHETS?

A: Yes. The Commission recently considered ratchets in Phase 1 of the UniSource Electric ("UNSE") rate case and found ratchets to be a sub-optimal rate design. Specifically, the ACC concluded that "[d]emand ratchets may be characterized as a substitute for rates that actually reflect cost-causation." The ACC directed UNSE in

[6] page 188 of its Order, at paragraph 60
[7] Decision No. 75875, p. 94.

its next rate case to "evaluate methods of revenue recovery that do not involve ratchets," such as seasonal and on- and off-peak demand charges.[8]

Q: IS THERE RECENT COMMISSION PRECEDENT FROM OTHER STATES TO REMOVE OR REDESIGN DEMAND RATCHETS IN OTHER STATES?

A: Yes. In September 2016, the Massachusetts Department of Public Utilities ("MDPU") rejected Massachusetts Electric Company's request to create a new ratchet, finding that demand ratchets:

- Provide no incentive to reduce demand beyond the class or system peak and little incentive to reduce kWh use;
- Distort price signals to customers and discourage customers from investing in load control equipment that would otherwise be cost-effective;
- Unfairly impose higher costs on certain customers.[9]

Q: WHAT DO YOU RECOMMEND WITH REGARD TO APS'S DEMAND RATCHET?

A: I recommend that the Commission, consistent with the direction provided in the TEP decision, require APS to offer LGS customers seeking to install energy storage, the opportunity to take service on a non-ratcheted, time differentiated optional rate. Under this rate, a customer's billing monthly demand should be based on the maximum monthly 15-minute interval demand, coincident with system peak. Should APS need to recover additional revenues under this rate to ensure adequate cost-recovery in the absence of the ratchet, I recommend APS be directed to place any additional costs in either the energy or demand rate, rather than the monthly fixed charge, to ensure that customers receive as much economic incentive as possible to respond to these rates.

[8] Decision No. 75697, p. 86.
[9] D.P.U. 15-155, p. 456

III. ADDITIONAL CONCERNS REGARDING LGS RATE DESIGN

Q: WHAT ARE YOU RECOMMENDING WITH RESPECT TO THE COMPANY'S LGS RATES?

A: Given the Commission's recent decisions directing UNSE and TEP to create more cost-based rate options for LGS customers, I am recommending that for a non-ratcheted LGS rate option for APS customers seeking to install behind-the-meter storage, the Commission direct the utility to update elements of its LGS rates to better align with cost-causation and incentivize peak demand reduction and adoption of load management technologies. As described in more detail below, I recommend that the Commission direct APS to:

- Change the current declining block structure of the demand charge to a flat or potentially inclining block demand charge for storage customers; and
- Significantly reduce or get rid of entirely the year-round off-peak demand charge.

Q: PLEASE DESCRIBE THE COMPANY'S CURRENT DECLINING BLOCK DEMAND CHARGE.

A. APS has proposed to maintain the declining block demand rate currently charged to customers on both the E-32 L and E-32 TOU L rates. Under these rates, customers are charged a higher rate for the first 100 kW of on- and off-peak demand, and a lower rate for all subsequent demand. For example, for secondary customers on the E-32 TOU L rate, the demand rates are as follows:[10]

[10] APS Application, Proposed E-32 TOU L rates.

Tier	$/kW
First 100 On-Peak kW	$17.694
All Additional On-Peak kW	$11.981
First Off-Peak kW	$6.467
All additional Off-Peak kW	$3.441

Q: WHAT ARE YOUR CONCERNS ABOUT THIS DECLINING BLOCK RATE?

A: The fact that customers are charged a lower rate for higher demand is contrary to Commission policy, as it does not send an appropriate price signal to customers to reduce demand. Rather, this rate structure provides customers with a discount or incentive for each kW of demand exceeding 100 kW. Declining block rates are outdated and clearly not cost-based. In a 2015 report on smart rate design, the Regulatory Assistance Project commented on declining block rates, stating the following:

> Declining block rates have largely fallen out of favor because they reward greater energy usage by the customer and do not properly reflect the increased costs associated with new resources needed to supply greater usage. They also undermine the economics of energy efficiency and renewable energy by reducing the savings a customer can achieve by reducing energy purchases from the utility.[11]

In addition to creating a perverse price signal, APS's declining block structure appears to be designed solely for the purposes of ensuring utility cost recovery. As designed, the upper bound of the first tier is less than the minimum monthly demand of at least 401 kW required to take service under this rate, making the cost of these first 100 kW function as an additional fixed charge paid by all ratepayers enrolled

[11] Smart Rate Design for a Smart Future, RAP, p. 83: http://www.raponline.org/wp-content/uploads/2016/05/rap-lazar-gonzalez-smart-rate-design-july2015.pdf ,

on this rate.

Q: WHAT CHANGES TO THIS DECLINING BLOCK RATE STRUCTURE DO YOU RECOMMEND?

A. I recommend that the Commission direct APS to change the current declining block structure of the demand charge to a flat or potentially inclining block demand charge for the non-ratcheted LGS rate option. This modification would create more cost-based rates, and provide an economic disincentive, rather than economic incentive, for customers to reduce their peak consumption. This increased value of peak demand reduction would encourage investment in demand management technologies such as energy storage.

Q: PLEASE DESCRIBE THE COMPANY'S CURRENT OFF-PEAK DEMAND CHARGE.

A. APS has proposed to maintain the off-peak demand rate currently charged to customers on the E-32 TOU L rate. Under this rate, in addition to the ratcheted on-peak demand charge, customers are charged a year round off-peak $/kW demand charge based on their maximum 15-minute demand during off-peak hours. APS has proposed the following off-peak demand charges for the E-32 TOU L rate:

Tier	$/kW
First Off-Peak kW	$6.467
All additional Off-Peak kW	$3.441

Q: WHAT ARE YOUR CONCERNS ABOUT THIS OFF-PEAK DEMAND RATE?

A: Rates should be cost-based and designed to incentivize desired consumption patterns. Given the fact that increased peak demand drives additional costs to ratepayers, the goal, as has been expressed by this Commission in the prior decisions

cited in this testimony, is to incentivize efficient consumption and load shifting to off-peak periods. From this perspective, there appears to be no justification for off-peak demand charges.

Q: WHAT CHANGES TO THIS OFF-PEAK DEMAND RATE STRUCTURE DO YOU RECOMMEND?

A. I recommend that the Commission direct APS to get rid of the off-peak demand charge entirely for the non-ratcheted rate option, and recover these costs in either the energy rates or on-peak demand charge to strengthen the price signals that encourage peak demand reduction and adoption of load management technologies. At the very least, the Commission should direct APS to adopt a clause similar to TEP's LGS and optional non-ratcheted LGS rates under which the off-peak demand charge is only applicable to the 15-minute maximum off-peak demand "that is in excess (i.e. positive incremental amount above) of 150% of that billing period's On-Peak measured demand."[12]

Q: DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A: Yes, it does.

[12] TEP LGS TOU and LGS TOU Storage Rates.